ABSTRACT OF THE INVENTION

The present invention includes systems and methods for estimating interference levels on idle channels in an unsynchronized TDMA or GSM wireless network. Each of *s* time slots is divided in to *n* distinct or overlapping segments. The interference level within each segment for each time slot is then measured and stored. In each subsequent frame in a predetermined accumulation interval T, the interference level within each segment of each time slot is measured and averaged with the measurements of the corresponding segment and corresponding time slot in previous frames. The maximum of the average interference measurements in all segments of all time slots yields increased accuracy for an interference measurement on the physical channel.